

REMARKS

The present application contains claims 11 and 15 through 20. Claim 20 has been allowed and claim 19 has been indicated as being allowable if rewritten to include all of the limitations of its base claim and any intervening claims.

Claims 11 and 15 through 19 have been amended to insert a "comma" at line 1 of each of these claims. No new matter has been added.

It is noted that the amendments to the claims received by the Patent Office dated May 28, 2002 have been accepted.

Responsive to the objection to claim 11, claim 11 has been amended to delete the semi-colon following the word "scene". For these reasons it is submitted that the objection to claim 11 should be withdrawn.

Claim 11 has been rejected on the 35 USC §102(b) as anticipated by Kondo (364). This rejection is respectively traversed.

The Examiner states that Kondo discloses an imaging apparatus shown in Figure 3 having an imaging element (solid state image sensor 13 shown in figure 5) for accumulating signal charge corresponding to an incident scene light flux in a photo-electric converting element section comprising: a strobo means (flash device 25 shown in Figure 5) for illuminating the scene incident on the imaging element, a sweep out means (element 13, figure 5) for sweeping out unnecessary charge in the imaging element and a control means (system controller 15 shown in Figure 5) for setting a lower sweep out frequency using clock signal generating means (element

26 shown in Figure 5) of the sweep out means when the strobo means is being charged than when the strobo means is not being charged, the examiner stating that since Kondo teaches that a lower frequency is being applied when the flash is not in use, that this inherently teaches that the sweep out frequency is lower when charging the flash, the examiner making reference to column 7, line 36 through column 8, line 62 of Kondo.

Applicant notes that the system controller of Figure 5 is designated by numeral 17 as opposed to numeral 15.

It is important to note that the objectives of Kondo and the objectives of the present invention are quite different and in order to achieve these objectives the approach employed in Kondo not only teaches away from the approach employed in the present invention, but is directly opposite the approach employed in the present invention.

The present invention is primarily concerned with the strobo charging period of the camera. The electrical power consumption during a strobo charging period is large whereas the electrical power consumption during all periods in which the strobo is not charging, is small. Thus, when the strobo is charging during operation of the imaging system, the frequency of the sweep-out signal is lowered to reduce the power drawn from the battery source.

In contrast, Kondo is primarily concerned with the blooming problem and notes that the blooming problem is extremely large during the period when a strobo is emitting light in comparison with all other periods in which the blooming is

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either small relative to the period during which a strobo is emitting light or in which blooming does not occur at all.

A large electrical power consumption during a strobo charging period causes a noticeable reduction in battery life and in some cases, the imaging system will not operate and is stopped due to such voltage reduction. In order to solve these problems and, in accordance with the present invention, when a strobo charging period is detected, the sweep out frequency of the sweep out signal regularly employed during the operation of the imaging device is deliberately set to a lower frequency than the frequency of the sweep out signal during a non-charging period of the strobo.

In contrast, since Kondo is primarily concerned with the blooming effect which is most significant during illumination of a strobo or flash, Kondo deliberately increases the frequency of the sweep out signal by setting the clock frequency during a strobo light emitting period to be a higher frequency than it is in other periods.

It is clear from a consideration of all the timing charts shown in Figures 4,6, 7(a), 7(b), 9, 10, 13(a), 13(b) and 14, that Kondo neither teaches nor even remotely suggests the objects, advantages and structures of the present invention utilized for setting a *lower* frequency to a sweep signal when a flash is being charged. Applicants submit that Kondo lacks any such teaching. The examiner, in making reference to column 7, line 36 to column 8, line 62, notes that a lower sweep out frequency is present when the flash is not in use and states that this inherently teaches that the sweep out frequency is lower when charging the flash. It is

submitted that this is a false and hence improper assumption since Kondo cannot and does not distinguish between a period in which the flash is not in operation and is not charging and a period in which the flash is not in operation and is charging. The present invention clearly has the capability of recognizing these two different states, either of which may occur during periods when the flash is not operating. As a result, based on the examiner's reasoning, and giving the examiner's assumptions, full faith and credit, for the sake of argument, the only thing that Kondo can be said to teach is that a sweep signal has a lower frequency when the flash is not operating as compared with the frequency of the sweep signal when the flash is operating, there being neither the ability of the Kondo device to distinguish between these two (2) states nor the recognition of the problem recognized by the applicants and the unique and patentable solution for alleviating the problem, as can be seen from the limited teachings of Kondo.

To the contrary, the present invention has the capability of distinguishing the condition of when a flash is off and not being charged and when a flash is off and being charged in order to properly adjust the frequency of the sweep signal in order to reduce the consumption of energy from the battery source during a sweep out operation when such sweep out operation occurs in coincidence with or in overlapping fashion with an operation in which the strobo is being charged.

Claim 11 positively recites sweep out means for sweeping out unnecessary charge in the imaging element; and a control means for setting a lower sweep out frequency of the sweep out means when the strobo means is being charged than when the strobo means is not being charged. These novel features are neither taught nor remotely suggested by Kondo and it is submitted that claim 11

patentability distinguishes thereover.

Claim 15 has been rejected under 35 USC §103(a) as unpatentable over Kondo in view of Anderson, (Patent '255). This rejection is respectfully traversed.

The examiner admits that Kondo does not explicitly disclose a control means for conducting a voltage check operation for monitoring a power source voltage level to prevent charging of said strobo means when the voltage level is below a predetermined threshold and relies upon Anderson for teaching power supply 17, an image capturing unit 14, the power supply having a voltage sensor 76 for verifying the voltage level of the power supply so that when the power supply is below a given threshold, power manager hardware 70 shuts down the charging of the flash and states that based on the combined teachings of Kondo in view of Anderson, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kondo by having control means for conducting a voltage check operation for monitoring the power source voltage level to prevent charging of the strobo means when the voltage is below a predetermined threshold voltage, the examiner stating that the motivation to do so would have been to compensate for power supply degradation in order to maximize the power supply's usable life and to optimize camera performance independent of the power supply's operating characteristics, as suggested by Anderson.

Even assuming, for the sake of argument, that Kondo is combinable with Anderson, the only thing that such a combination would properly teach is the ability of the Kondo imaging device to be prevented from charging a strobo device in the event that the battery level is below a predetermined threshold.

It should be noted that claim 15 depends from claim 11 and carries all of its limitations and for this reason, it is clear that claim 15 patentably distinguishes over Kondo taken alone for same reasons set forth hereinabove with regard to claim 11. Anderson lacks the same teachings lacking in Kondo in that there is no teaching of the ability to check when a strobo is being charged as compared with when a strobo is not being charged and to alter the frequency of the sweep out signal when the strobo is being charged.

In addition, it is also important to note that since Kondo is in no way concerned with the period during which a strobo is being charged, it is submitted that, if the strobo in Kondo was charging during the time that imaging system triggers the strobo to emit light, that Kondo would utilize a sweep out signal of a higher frequency during such time since the overriding objective of Kondo is to prevent blooming which is in direct contrast to the objective of the present invention. For these reason it is submitted that claim 15 further patentably distinguishes over the combination of Kondo and Anderson and that claim 15 patentably distinguishes over the Kondo/Anderson combination.

Claims 16 through 19 have been rejected under 35 USC §103(a) as unpatentable over Kondo in view of Iida, Patent ('023). This rejection is respectfully traversed.

Making reference to paragraph 6, page 4 of the Office Action, it is noted that the examiner has stated that claims 16-19 are rejected. However, it is noted that paragraph 8 at page 5 of the Office Action indicates that claim 19 is allowable and

further that the Office Action Summary indicates that claim 19 is objected to. As a result, applicants assume that claim 19 has not been rejected based on the prior art cited by the examiner.

With regard to claims 16 and 17, the examiner admits that Kondo does not explicitly disclose the imaging apparatus having a shutter release button movable to a partially depressed position and a fully depressed position and control means initiating a voltage check operation when the shutter release button is moved to the partially depressed position and relies upon Iida for teaching a camera having a release button movable to a half depressed position and a fully depressed position wherein the camera performs a voltage check on the battery of the camera when the release button is half depressed to determine if the camera is capable of performing other functions, which functions include charging the flash and distance measuring, since satisfactory performance of these functions may be affected as a result of reduced battery power.

Claims 16 and 17 depend from claim 11 and carry all of its limitations and for this reason, it is clear that claims 16 and 17 patentably distinguish over Kondo taken alone for same reasons set forth hereinabove with regard to claim 11.

Iida lacks the same teachings lacking in Kondo, namely identifying the presence or absence of a strobo charging operation and reducing a frequency of the sweep out signal during the time that the strobo is being charged. Iida is limited to teaching a battery check and is totally silent with regarding adjusting a frequency of a sweep out signal responsive to a charging operation of a strobo.

The only proper combination that can be made of Kondo and Iida is the ability of the Kondo camera to perform a battery check when a shutter button is moved to a half depressed position to determine if camera operations such as recharging of a strobo and the performance of a distance measurement can successfully be performed as a function of battery level, which clearly falls short of the novel features of claims 16 and 17 which depend from claim 11, and hence are submitted to patentably distinguish over the Kondo/Iida combination.

Regarding claim 18, the examiner states that the control means monitors the strobo means to determine if the strobo means is charging responsive to completion of a voltage check movement of the shutter release button to the fully depressed position. Even assuming Iida to be combinable with Kondo, it is submitted claim 18 depends from claim 17 which in turn depends from claim 11 and hence claim 18 patentably distinguishes over Kondo taken alone for the same reasons set forth hereinabove with regard to claim 11 and patentably distinguishes over Kondo and Iida for the same reasons set forth hereinabove with regard to claim 17 and, even assuming for the sake of argument that Iida monitors the strobo means to determine if the strobo is charging responsive to completion of a voltage check operation and movement of the shutter release button to the fully depressed position, the Kondo/Iida combination still fails to teach the capability of changing a frequency of a sweep out signal to reduce the sweep out signal frequency during a period when a strobo is charging and it is therefore submitted that claim 18 patentably distinguishes over the combination of Kondo and Iida.

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In view of the fact that claim 11 is submitted to be allowable over the cited prior art, it is submitted that the need for amending claim 19 has been obviated.

In view of the foregoing, it is submitted that claims 11 and 15 through 18 are allowable and reconsideration and allowance of these claims are respectfully solicited, together with allowed claim 20 and allowable claim 19.

In the event that the Examiner believes that any additional matters need to be addressed in order to place this application in condition for allowance, or that a telephone interview will help to materially advance the prosecution of this application, the Examiner is invited to contact the undersigned by telephone at the Examiner's convenience.

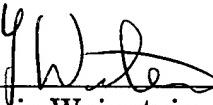
In view of the foregoing amendments to the claims and the remarks set forth above, Applicants respectfully submit that the present application is in condition for allowance and a notice to that effect is respectfully requested.

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Favorable action is awaited.

Respectfully submitted,

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Enclosures